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Ex Parte

Marlene H. Dortch
Secretary, Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Expanding Flexible Use of the 3.7 to 4.2 GHz Band, GN Docket No. 18-122

Dear Ms. Dortch:

As a follow-up to a number of discussion items from Verizon's September 24 meeting with the Office of the General Counsel and the Wireless Telecommunications Bureau about the C-Band proceeding, we offer a number of observations regarding how important it is for the Commission to move quickly to promote 5G deployment in the United States, the increasing use of fiber facilities to distribute video content, and how the C-Band Alliance is uniquely positioned to help guide the transition for re-packing.

Timing Is Crucial for 5G Deployment.

As the Commission finalizes its approach to repurposing the C-band, there are significant economic benefits at stake, and any unnecessary delay in unleashing C-band spectrum for 5G will have big negative impacts for the United States. The United States stands to realize significant economic benefits from the rapid deployment of 5G – and mid-band frequencies will be an important component of 5G. One recent report concluded that licensing 400 megahertz of new mid-band spectrum would lead to more than $154 billion on infrastructure spending, 1.3 million new jobs, and $274 billion added to America's GDP.[1] And, those are benefits that stem directly from licensing mid-band spectrum. Other studies underscore the substantial economic benefits of 5G more generally.[2]

[1] David Sosa and Greg Rafert, *The Economic Impacts of Reallocating Mid-Band Spectrum to 5G in the United States*, ANALYSIS GROUP, at 1 (Feb. 2019), https://www.analysisgroup.com/globalassets/uploadedfiles/content/news_and_events/news/sosa-rafert-economic-impacts-of-reallocating-mid-band-spectrum-to-5g-1.pdf.

[2] *See, e.g.*, Dr. Michael Mandel, *Long-term U.S. Productivity Growth and Mobile Broadband: The Road Ahead*, PROGRESSIVE POLICY INSTITUTE, at 9 (Mar. 2016), https://www.progressivepolicy.org/wp-content/uploads/2016/03/2016.03-Mandel_Long-term-US-Productivity-Growth-and-Mobile-Broadband_The-Road-Ahead.pdf (explaining 5G wireless networks will add $2.7 trillion to U.S. GDP by 2030, roughly equivalent to increasing annual GDP growth by 0.7 percentage points); *Smart Cities: How 5G Can Help Municipalities Become Vibrant Smart Cities*, ACCENTURE STRATEGY, at 3 (2017), https://newsroom.accenture.com/content/1101/files/Accenture_5G-Municipalities-Become-Smart-Cities.pdf (finding

Moreover, studies agree on the importance that leading in 5G development and deployment can bring in terms of jobs, infrastructure, and economic growth. For example, one recent study found that U.S. leadership in 4G accounted for a nearly $100 billion increase in the annual GDP.[3] Likewise, another report explained that "[c]ountries and cities that are quicker to adopt 5G technology will benefit from larger gains in productivity output through higher utilization of assets."[4]

In contrast, a delay in the rollout of 5G in mid-band frequencies like the C-band – even by one year – would have costly impacts that will diminish the economic benefits highlighted above. For example, the Brattle Group estimates that pursuing an administrative approach in which the FCC tries to reclaim the spectrum to conduct its own public auction of C-band spectrum "would significantly decrease the value of repurposing any C-Band frequencies."[5] Specifically, the Brattle Group estimates that just one year of delay could reduce the total social value of repurposing the C-band by between 7 percent and 11 percent.[6] Economists estimate that the social value of spectrum is between 10 and 20 times its economic value.[7] The Brattle Group concludes that "every $1 billion in delay costs would create total social costs of $10 billion to $20 billion."[8]

Economist Jeffrey Eisenach shares these concerns explaining that for every year of delay (relative to a private market approach) "consumer welfare is reduced by $15 billion."[9] He estimates that the "break-

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that 5G deployment in the United States will result in $275 billion in investments by the wireless industry, three million jobs, and $500 billion in economic growth).

[3] *See How America's Leading Position in 4G Propelled the Economy*, RECON ANALYTICS, at 1, 9 (Apr. 16, 2018), https://api.ctia.org/wp-content/uploads/2018/04/Recon-Analytics_How-Americas-4G-Leadership-Propelled-US-Economy_2018.pdf; *see also The 5G Ecosystem: Risks & Opportunities for DoD*, THE DEFENSE INNOVATION BOARD, at 7 (Apr. 2019), https://media.defense.gov/2019/Apr/04/2002109654/-1/-1/0/DIB_5G_STUDY_04.04.19.PDF (explaining that the "leader of 5G stands to gain hundreds of billions of dollars in revenue over the next decade, with widespread job creation").

[4] Frost & Sullivan and Principal, *5G: The Foundation for a Hyper-Connected World*, PRINCIPAL (Feb. 2018), https://www.principalglobal.com/knowledge/insights/5g-foundation-a-hyper-connected-world?_ga=2.220663451.260494758.1569982703-566564911.1569982703.

[5] Coleman Bazelon, *Maximizing the Value of the C-Band: Comments on the FCC's NPRM to Transition C-Band Spectrum to Terrestrial Uses*, BRATTLE GROUP, at 27 ("Brattle Paper"), attached as App. A to the Joint Comments of Intel Corp., Intelsat License LLC and SES Americom, Inc., GN Docket No. 18-122 et al. (filed Oct. 29, 2018), https://ecfsapi.fcc.gov/file/102980223165/Intel_Intelsat_SES_Joint_NPRM_Comments%20Final%2010-29.pdf.

[6] *Id.*

[7] *Id.* at 27 n.72.

[8] *Id.* at 27.

[9] Reply Declaration of Jeffrey A. Eisenach, Ph.D., at 16, attached to Reply Comments of the C-Band Alliance, GN Docket No. 18-122 et al. (filed Dec. 7, 2018), https://ecfsapi.fcc.gov/file/1207392316779/Eisenach%20Declaration%20for%20Reply%20Comments%20of%20the%20C-Band%20Alliance.pdf.

even point" is four months.[10] This means that Americans are better off with a private market approach if that approach is even just four months faster than an FCC-led auction.

Fiber Is Being Used to Deliver More Video.

In addition to being a nationwide wireless provider aggressively deploying 5G, Verizon continues to be a significant provider of wireline services and video distribution. We are currently deploying roughly 1,400 route miles per month in more than 60 markets outside of our traditional landline footprint.[11] And to support our Fios TV service, we own and operate earth stations using C-Band spectrum to receive some of the video programming that we package and sell to millions of Fios customers. This unique perspective allows us to understand both the need for mid-band spectrum and fiber to provide advanced wireless services like 5G, and how transitioning a portion of the C-Band for that purpose will impact existing earth station uses. Our experience shows, and recent trends confirm, that reliance on fiber delivery for video services is growing and should help ease the transition to repurposing a portion of the C Band for terrestrial, mobile use.

In our role as a video distributor, we receive video programming in multiple ways – not just via C-Band. We generally receive video content using technologies specified by the content provider. That includes receiving video content through earth stations that route signals through our two video "super head-ends" located in the United States. And it also includes receiving signals over fiber facilities from content providers. Our experience suggests that content providers are increasingly using fiber to distribute content.

We believe this transition towards greater content distribution over fiber is occurring for a number of reasons, including that fiber is becoming more widespread. Verizon is not alone in investing in fiber deployment, as the Fiber Broadband Association has documented in the record tremendous growth in recent years.[12] Fiber is fast becoming an efficient, scalable delivery medium for linear video distribution. And fiber delivery is also particularly suited for the increase in over-the-top content because a pure IP delivery solution thrives with the increased bandwidth and low latency that fiber provides. As a result, the transition away from satellite service for content delivery is already underway in some respects and will increase over time. At the same time, Verizon does not support the ACA Coalition's proposal to mandate a transition to fiber due to legal infirmities and uncertainties regarding a viable path to promptly repurpose 3.7-4.2 GHz spectrum.[13] Video distributors should continue to have flexibility to determine the

[10] *Id.*

[11] *See*, Edited Transcript of 2Q 2019 Verizon Communications Inc. Earnings Call, at 3, Thomson Reuters Street Events (Aug. 1, 2019), https://www.verizon.com/about/file/36149/download?token=jEqYA9Ot.

[12] *See, e.g.*, Letter from Lisa R. Youngers, President & CEO, Fiber Broadband Association, to Ms. Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Sept. 13, 2019).

[13] *See* Comments of Verizon, GN Docket No. 18-122 (filed Aug. 7, 2019).

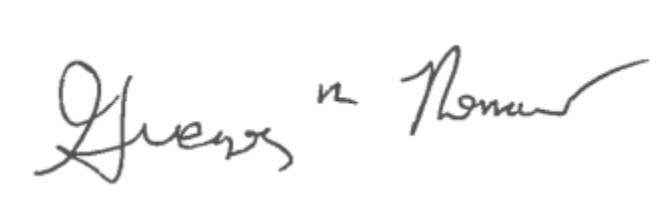
technologies that best meet their needs going forward – whether continued use of C-Band or fiber or something else.

The C-Band Alliance Can Help Facilitate the Transition of the C-Band.

As the Commission repurposes a portion of the C-Band from satellite to wireless use, a highly coordinated effort is necessary to facilitate that transition and ensure that video distributors can continue to serve their customers without interference regardless of distribution medium. As a MVPD that relies in part on earth stations to receive video transmissions, Verizon believes that a transition facilitator, like the C-Band Alliance, is well positioned to administer that coordination effort. C-Band Alliance members will best understand their customers' needs and will have every incentive to meet them.

We understand that the C-Band Alliance is prepared to lead frequency repacking and filter deployment efforts on behalf of their customers. This will simplify the experience for video distributors such as Verizon, allowing us to avoid receiving multiple different schedules from different content providers in a disjointed fashion. Verizon welcomes these coordination commitments as the most efficient way to repurpose the band in a way that does not impact our Fios video customers.

Sincerely,



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